



U.S. Department of Labor
Mine Safety and Health Administration
 Protecting Miners' Safety and Health Since 1978



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Injury Trends in Mining

Since the earliest days of mining, the job of digging coal and other useful materials out of the earth has been considered one of the world's most dangerous occupations. Public concern about the toll of deaths, injuries and destruction in mine accidents has prompted passage of much-needed safety legislation and intensified the search for safer methods and improved training practices and technology. Growing cooperation among industry, labor and government also has contributed to making mining safer and more healthful, especially in recent years.

As a result of these initiatives, mining deaths and injuries have significantly declined in this century, although even the current relatively low injury numbers and frequency rates are still unacceptable to safety professionals in the American mining community and the Mine Safety and Health Administration (MSHA).

The Tragic Early Toll

From 1880 to 1910, mine explosions and other accidents claimed thousands of victims. The deadliest year in U.S. coal mining history was 1907, when 3,242 deaths occurred. That year, America's worst mine explosion ever killed 358 people near Monongah, WV. While metal and nonmetal (non-coal) mining was less deadly than coal mining, available records for the era show that it, too, was highly hazardous. Fires, explosions and cave-ins caused many deaths and injuries. One of the deadliest non-coal mining accidents involved a mine fire in Montana that killed 163 men in 1917.

With each passing decade, the annual number of mining deaths and the even more significant rates of injuries (measuring numbers of injuries against hours worked) have declined.

Decades of Difficult but Impressive Progress

Total deaths in all types of U.S. mining, which had averaged 1,500 or more during earlier decades, decreased on average during the 1990's, to under 100 and reached a record low of 55 in 2004. There were 65 mining fatalities in 2007. The average annual injuries to miners have also decreased steadily.

Where annual coal mining deaths had numbered more than 1,000 a year in the early part of the 20th century, they decreased to an average of about 451 annual fatalities in the 1950s, and to 141 in the 1970s. The yearly average in coal mining decreased to 30 fatalities from 2001-2005.

Less dramatic yet still impressive have been the safety gains in metal and nonmetal mining. There was an average of 233 deaths yearly in the 1930s, compared to 32 fatalities from 2001-2005.

Significant reductions in rates of mining deaths also have been achieved over the years.

For example, the rate of coal mining deaths decreased from about .20 fatalities per 200,000 hours worked by miners (or one death per million production hours) in 1970 to about .07 fatalities in 1977 and an average of .03 fatalities for the 2001-2005 period.

The metal and nonmetal mining death rate per 200,000 employee hours averaged .02 for the 2001-2005 period, compared to average yearly rates about seven times higher in the 1930s and three times as high in the 1950s.

The year 2004 was the safest year in modern mining history, with a total of 55 coal and metal and nonmetal mining fatalities. There was an all-time low 23 coal mining fatalities in 2005, compared to the previous all-time coal industry low of 28 in 2002. During a period in 1992, from May 27 to July 14, the coal mining

industry did not experience any fatal accidents while producing many million tons of coal--a period of rare length in mining history. There were 33 coal fatalities in 2007.

The all-time low for metal and nonmetal mining fatalities was 26 in 2003 and 2006. There were 32 metal and nonmetal fatalities in 2007.

Entire Mining Community Involved in Safety Gains

A combination of factors has been responsible for the dramatic safety gains in the U.S. mining industry since the turn of the century. The major elements of these accomplishments have been the following:

- Congressional creation in 1910 of the U.S. Bureau of Mines, whose primary roles were to investigate accidents, advise industry, conduct production and safety research and teach courses in accident prevention, first aid and mine rescue;
- Federal and state laws to better advise and regulate the mining industry, to extend coverage to all types of miners, to require or encourage use of successful safety procedures and technology, to provide effective miner training, and to focus on reducing or eliminating the most serious hazards. The most far-reaching laws were the Federal Coal Mine Health and Safety Act of 1969 and the more comprehensive [Federal Mine Safety and Health Act of 1977](#);
- Creation in 1973 of the Mining Enforcement and Safety Administration in the Interior Department, which assumed safety and health enforcement responsibilities from the Bureau of Mines. And four years later, following passage of the 1977 Act, creation of the present Mine Safety and Health Administration (MSHA), which was moved to the Labor Department.
- Introduction of vastly safer and more productive mining machines and systems, ever-safer mining methods, a growing awareness of the importance of effective accident prevention programs among both management and miners, and a more cooperative attitude toward safety issues by the mining industry, labor and government.

Fatalities and Injuries for All Mining (Coal & Noncoal)		
Year	Average Annual Deaths	Average Annual Injuries
1936-1940	1,546	81,342
1941-1945	1,592	82,825
1946-1950	1,054	63,367
1951-1955	690	38,510
1956-1960	550	28,805
1961-1965	449	23,204
1966-1970	426	22,435
1971-1975	322	33,963
1976-1980	254	41,220
1981-1985	174	24,290
1986-1990	122	27,524
1991-1995	99	24,201

1996-2000	86	17,500
2001-2005	62	12,952
2006-2007	69	11,800

For more information, contact:

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